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ABSTRACT

This paper examined issues that affect rural students with exceptionalities and identified effective techniques to reverse problems confronting these students. Following an introductory section, an overview of rural special education programs identifies consistent problems of misidentification, mistakes in assessment, misclassification, misplacement, and lapses in instruction for reasons such as lack of qualified personnel, inflexible funding formulas, and geographic remoteness. The following section notes special problems such as difficulty serving students with low incidence disabilities (students with moderate or severe retardation, multiple disabilities, vision or hearing impairments, orthopedic disabilities, emotional disturbances, and those requiring related services). The next section, on innovative strategies, urges collaborative transdisciplinary teaming approaches, increased staff development that involves the community, and provision of services based on principles of inclusion, community-referenced curriculum, and student-centered educational planning. The role of state departments of education is discussed with examples from Utah. Examples are also provided of innovative efforts by local rural school districts and of teacher education programs in Utah. Ways that technology can address the special problems of this population are considered with 10 examples of successful uses of technology in rural settings with diverse groups of students. (Contains 51 references.) (DB)

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Rural Students with Exceptionalities: Refocusing in the New Millennium

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Abstract

Rural students with exceptionalities have multidimensional problems that include inadequate school facilities, poor funding, inadequate program coordination, and lack well-trained teachers and specialists. With new laws (e.g., IDEA 97) and increasing demands for accountability, rural school districts find themselves in precarious positions as they try to shift their powers and paradigms. The critical question is, how can these rural schools refocus in this new millennium to help rural students with exceptionalities to maximize their fullest potential? In this article, we examine the broad array of issues that impact rural students with exceptionalities. Additionally, we conceptualize effective techniques to reverse problems confronting these students..

Rural Students With Exceptionalities:
Refocusing in the New Millennium

Rural students with exceptionalities seem to live in a different America. In rural school districts and communities, things seem to be different. In a review of U.S. Census Bureau data by Helge (1981), a district is considered rural when located in counties with 60 percent or more of the population living in communities no larger than 5,000 inhabitants. In other words, districts with more than 10,000 students and those within a standard metropolitan statistical area (SMSA) are not considered rural. Apparently, rural environments may be perceived as simple, complex, spiritually nourishing, or very threatening depending upon the individual and the situation. With fewer traditional landmarks and clues, and a unique and sometimes subtle level of activity, the rural environment is much different from the more structural urban environment.

Many rural students with exceptionalities live on farms or in homes nestled in the wilderness miles from a town or village centers. Here, the terrain may be especially rough and may make locomotion very difficult for students with exceptionalities, especially those in wheelchairs and those with visual impairments. When walking or pushing a wheelchair on a dirt road or path, one may encounter holes, tree roots, fallen trees, ditches, and the hazard of low-hanging branches (Tucker, 1989). According to Tucker, rural dwellers are usually in their communities by choice and often have a very strong love and understanding of their environment, rejoice in it, work in it, and have some very individualized impressions of their areas. Every morning, hundreds of thousands of American children head off to rural schools where it is hoped they will gain the skills and knowledge to shape their futures – and the future of America and the world. Too often rural schools are poorly housed, ill-equipped, and badly staffed. For many,

perhaps most, these conditions have become chronic ones which hamper the quality of rural education across America, conditions which defy the efforts of local educators and citizens (Gregory, 1993; Obi & Obiakor, in press).

While rural schools may differ significantly from one another relative to geographic or socioeconomic variables, it appears that these differences mask a common set of problems. For example, rural schools may be found on remote islands, in small communities, or in deserts. Local economies may be stable with little or slow growth or expanding with high growth rates. Communities served by rural schools may be geographically isolated, serving a dozen students within a 75-mile radius of the school or may be located in a small town serving 200 students within a 10-mile radius (Gold, Russell, & Williams, 1993). Despite the contrast, rural school administrators report similar types of problems such as limited access to educational support services (Minor & Williams, 1987), high turnover among auxiliary and special education personnel (Helge, 1984a), and difficulty recruiting trained staff for high turnover positions (Kirmer, Lockwood, Nickler, & Sweeney, 1984; Obi & Obiakor, in press).

The recent upsurge of federal and state demands on educational accountability, as witnessed through various reports on educational excellence, has created a dilemma for rural states with small isolated school districts. Also increased requirements in mathematics, science, language arts, and foreign languages have magnified this problem for many of the smaller school districts in the country. The ability of such districts to provide quality special education services on their own is fast becoming an insurmountable task. Many, if not all, rural special education programs across the U.S. are grappling with issues such as financing, staffing, and scheduling. Rural students with

exceptionalities are particularly susceptible to being confronted by the negative outcomes associated with these contemporary issues. These problems are different in different situations, and they are related to such factors as numbers of children to be served, numbers of children with similar needs, and types of programs that can function successfully in a given school (Mayer, 1982; obi & Obiakor, in press).

Due to the unique character of rural areas, there are many problems and considerations associated with the delivery of services to children who have special needs. These include geographic barriers, climate limitations, distances between service providers and the clients, cultural differences, resistance to change, preference to rely on kinship rather than outsiders, transportation and funding inadequacies, and recruitment and retention of qualified personnel (Helge, 1983, 1984b; Mallory & Berkeley, 1987; Marrs, 1984; Stile & Mitchell, 1995). As the country strides in the new millennium, these students are still faced with greater needs in all areas than their counterparts in urban special education programs. In this article, we examine the broader array of issues that impact rural special education programs, with emphasis on rural students with exceptionalities. We also aim at conceptualizing effective techniques to reverse problems or difficulties confronting these students in this new millennium.

Rural Special Education Programs: An Overview

In general and special education programs, rural students with exceptionalities are consistently at-risk of misidentification, misassessment, misclassification, misplacement, and misinstruction because of lack of qualified personnel in these areas. Helge (1984a) reported that teacher turnover in rural school districts often ranges from 30 to 50 percent,

especially within specialized areas such as speech, physical, and occupational therapy. Turnover for itinerant personnel serving the low-incidence area is also extremely high. With such pressing problems in attrition, combined with a teacher-training model that does not address rural needs, a new and fresh approach must be taken. Earlier, Helge (1983) argued that there must be new preparation programs created, or current programs altered that will build a cadre of special education teachers who are truly adequately trained, and knowledgeable about the unique challenges of teaching and living in rural areas. Helge reiterated that only 10 percent rural-area teachers who were interviewed described their preservice program to be adequate for their work in rural areas. Those interviewed expressed the need to have additional knowledge and skills to work with a variety of students with exceptionalities in rural areas where few, if any, specialists would be available to them. Today, similar phenomena exist (Obi & Rotetori, in press).

Researchers and scholars have continued to decry problems faced by small rural districts which include geographic size and inadequacy of the general education offerings as well as nonexistent special education programs, unserved and unidentified students, lack of qualified staff, and uneven distribution of federal funds (Woodburn & Young, 1980). These, as well as problems in transportation (Plante, 1979), staff development (Helge, 1980), and instructional and noninstructional materials (Uxer, 1982) have led superintendents to the exploration of cooperative ventures. Akin (1988) noted the tremendous shortage of licensed special education teachers in every region of the United States. While two thirds of school systems in this country are rural (Sher, 1978), the training centers for special educators are often located in or near urban areas, making it even more difficult for rural schools to compete with urban counterparts for a limited

supply of trained personnel (Gold et al., 1993). Helge (1983) indicated that the recruitment and retention of qualified staff to serve in special education programs ranked as the second and third most frequently reported problem in a national survey of 200 rural school systems for the United States Office of Special Education Programs.

As indicated earlier, geographic problems or inflexible funding formulas for special education services contribute to (a) low retention rates among special education teachers and ancillary staff (e.g., school psychologists, speech and language therapists), (b) inefficient provision of service to rural students with exceptionalities, and (c) communication barriers among staff (Seager, Miller, & Bagby, 1980). For example, to provide service to five students daily, a physical therapist working in rural farm community may spend one hour commuting among three schools while an urban counterpart serves the same five children in one school, avoiding interschool commute time. Since categorical funding limits a school system's ability to serve students by ignoring such factors as commute time and the like, both therapists must serve the same number of students in order to obtain full reimbursement (Crowner, 1985). This disparity in distance, coupled with a narrow funding formula, results in less time for service delivery to rural students and reduces time available for consultation between ancillary staff and special educators. While special educators have greater access to students needing supplemental therapy, they have less training than ancillary staff in provision of support service such as physical, speech, or occupational therapy. Thus, consultation between these professionals is essential for the special educator to extend the amount of time an exceptional child receives language, physical, or occupational therapy. The

quality of ancillary service is jeopardized when consultation time is eroded as a result of required commutes between schools (Obi & Obiakor, in press) .

Despite the comprehensive nature of special education legislation in the United States, such as the 1975 Education of All Handicapped Children's Act (PL 94-142) later re-authorized in 1990 as the Individuals with Disabilities Education Act (IDEA, PL 101-476), and amended as IDEA 97 (PL 105-17), rural programming has remained problematic. For example, Helge (1981, 1984a, 1984b, 1987) investigated factors associated with adequacy and appropriateness of rural programs. Predominant problems of rural service delivery were linked to the following four inherent characteristics of rural communities: (1) lack of appropriate service delivery models, (2) geographic remoteness, (3) shortage of service providers with generic special education skills; and (4) inadequate numbers of special educators with rural training or experience. Not long ago, Knoll and Obi (1996) analyzed inclusive education in Eastern Kentucky, the 22 county region in the rural heart of Appalachia. They found a wide variation in the degree to which inclusive education is being implemented. Individual teachers and administrators reported discrete, episodic, and often isolated efforts toward inclusion. These same educators expressed frustration over the lack of information and technical assistance to support their effort. In other words, daily practice in the schools of Eastern Kentucky continues to be based on "mainstreaming," the individual involvement of students with disabilities in regular classes. A movement to form inclusive schools with a coherent vision of effective education for all members of a diverse student body and a fundamental reordering of the relationship between regular education and special education have barely begun. Again, the findings of this study reflect a common practice of most, if not all, rural schools

across the country. However, the findings also suggest that there is a good foundation on which to undertake this challenge.

Rural Students with Exceptionalities: Pertinent Problems

In recent years, services to children with disabilities in rural areas have improved; however, many problems still exist that inhibit the delivery of these services, such as professional isolationism. Small rural school districts cannot afford the luxury of a variety of professional staff specialists. Often, the special education teacher, guidance counselor, or resource teacher will be the lone representative of their specialty. For example, they may be responsible for 12 grades and spread over several buildings. Classroom teachers may also have duties that extend from grades 5 to 12. This means staff development activities can become diluted, in the sense that teachers are expected to gain new knowledge and competencies encompassing more topics for a wider age range of students. It also means that a teacher in small rural schools may be the only teacher of a given subject at a given grade level. Teachers have little opportunity to interact with peers facing the challenges (Bell, Bull, Barrett, Montgomery, & Hyle, 1993; Storer & Crosswait, 1995). As Bell et al. pointed out, 81 percent of rural regular and special education teachers express concern about feelings of professional isolation working in rural areas. This problem negatively affects the recruitment and retention of special education teachers. As a consequence, serious shortage of qualified teachers and related service personnel can become a critical barrier to providing high quality services to students with exceptionalities.

The most difficult to serve in rural school districts are those Helge (1984a) described as low incidence disabilities (students with moderate or severe retardation and

multiple disabilities, vision or hearing impairments, orthopedic disabilities, emotional disturbances and those requiring related services). Historically, these students either were not served, or they were served out of their local district in residential placements. With the passage of federal legislation mandating educational programs for all students with disabilities, Helge noted that more students with low incidence and severe disabilities were remaining in their local rural communities. The current national focus on advocacy to include students with low incidence disabilities in their neighborhood schools further challenges rural school districts to meet the complex needs of these students in least restrictive settings (Obi & Obiakor, in press; Stainback & Stainback, 1985; Thousand & Villa, 1989; Zeph, 1991)

Rural school district personnel struggle with multiple issues in attempting to meet the educational needs of students with low incidence disabilities. Service delivery is complicated by the low numbers and the geographical disbursement of students with complex learning needs (Helge, 1984b). If a district has only one or two students with a given disability, such as deafness, it is difficult to obtain the resources needed to provide for the needs of the student(s). In rural settings, this dilemma is caused by a small general population. However, children with low incidence disabilities may also be difficult to serve in urban settings because there may not be enough children with a particular disability to justify the development and maintenance of a special program (Mayer, 1982). Clustering rural students with low incidence disabilities not only prevents districts from serving students in the least restrictive setting, but it creates unreasonable demands for students and their families because of the long distances students may need to travel to have access to these services. Itinerant service delivery options also are

complicated by travel difficulties (Sebastian & McDonnell, 1995). Students with unique conditions and needs usually need modification in educational process. To meet the needs of students with low incidence disabilities, highly skilled teachers, specialized equipment, and specialized materials are also needed. The sparse population of children with similar needs in the low incidence groups can tax the ingenuity of administrators seeking effective models for delivery of services. In rural areas where there are problems with recruitment and retention of certified special education personnel, stress-induced burnout among special educators has also become a concern of administrators. This results in special educators serving many different roles due to lack of additional supportive personnel (Obi & Obiakor, in press).

Like others, rural students deserve effective instructional programming. To disseminate validated instructional practices to those rural students with exceptionalities, a number of principles must be considered. The diversity of rural contexts and people that live within them must be recognized and respected (Davis 1989; Helge, 1989). Diversity includes racial and ethnic identity, socioeconomic status, religiosity, occupational patterns, and proximity to neighbors and population centers. As these characteristics vary, so too do cultural values and norms, the ability to secure informal and formal supports, and the role of schools and other social institutions in helping families. The imposition of nomothetic, urban values and solutions on the lives of rural families can be inappropriate and harmful, disturbing established coping strategies, and "rocking the boat" (Schumm & Bollman, 1981, p. 140) of family equilibrium. Helge (1984b) called for the development of methods to resolve dilemmas in rural special education in which the diversity of rural communities should be brought to bear to assist

students with disabilities and their families. According to Helge, willful leadership at locale, state, regional, and national levels is needed to assure that rural schools are able to receive the share of resources necessary for the delivery of high quality special education programming. There needs to be a new beginning and a greater understanding of the sociological dimensions of rural America, and a call for the celebration of a way of living and to finding ways overcome problems that impact students, teachers, parents, and others working in schools and in the community. Of particular interest from an historical perspective is Butterworth's (1926) statement: "Progress in this field will usually, as elsewhere, not come through radical procedures. Rather it will be through a painstaking building up from conditions as they are to conditions as we think they ought to be" (p vii).

Innovative Methods for the New Millennium

It is apparent that enhancing rural programs to benefit students with exceptionalities requires a process of system change, as opposed to isolated programs and invalidated instructional practices often common with programming for these students. There is a pressing need to help rural educators meet the needs of these students. A useful process for improving rural special education is by reviewing the various concerns of researchers, scholars, and advocates, who are calling for changes in the way educators provide services in both rural and urban schools. The call for a change came in earnest with inclusive education advocates such as Will (1986) urging general educators and administrators to become more responsible for the education of students who have special needs in schools, including those who are economically disadvantaged. Her views have been supported by many scholars and educators in recent years.

It seems clear that fundamental changes will have to take place in rural educational programs to address the needs of students with exceptionalities. Knoll and Obi (1996) suggested that (a) practitioners currently working in schools must be provided with resources, training, and time needed to develop effective cooperative and collaborative working relationships, (b) universities, engaged in preservice teacher education, need to breakdown the barriers between urban schools and rural schools, (c) every school should have a restructuring task force that provides an opportunity for all stakeholders to buy into the vision and contribute to the local design of reform, (d) the State Department of Education, regional special education cooperatives, local districts, and universities should collaborate to design regional support teams to assist individual special education programs in working through the process of restructuring, and (e) professional development activities that allow all teachers to examine basic topics in education of students with disabilities must be established.

Specialized instruction, for rural students with exceptionalities, cannot be carried out effectively without the involvement of professionals trained to seek common perspectives and provide comprehensive services. With the call for system change, the need to develop efficient and cost-effective strategies increases. Collaborative teaming can be both cost effective and appropriate. The development of cooperative, transdisciplinary approaches will continue to be essential and the policy of a closed network of school professionals will no longer adequately serve the population of rural students with exceptionalities. A collaborative approach is important for communication among the professionals working within the new arena. Supportive attitudes must prevail for success in transdisciplinary teaming (Correa, 1989; Yates, 1988). In the same

measure, rural school districts must consider staff development as a common vehicle for providing help to rural educators. Schools must create a community, defined by the school district, if it is to have the cooperative support of the people it serves. To achieve this, it is important for small rural schools to engage in staff development activities that involve the community and help make community members more aware of the educational technology that is being incorporated into their schools (Storer & Crosswait, 1995). Small rural schools are generally geographically distant from off-site locations and must be supported as they absorb greater expense and hardship to take advantage of these activities (Storer & Crosswait).

Not long ago, Sebastian and McDonnell (1995) noted that the organizational structures of education programs for rural students with exceptionalities will vary significantly and that district personnel should strive to base the services they provide in terms of the following six principles: (a) inclusion in the school., (b) peer and community-referenced curriculum, (c) student-centered educational planning, (d) instruction in actual performance settings, (e) positive behavioral support, and (f) transdisciplinary teams. These six principles, according to them, are recommended practices that can be adapted so that professionals can provide high quality educational programs for rural students with exceptionalities in the new millennium. An example is a project for a statewide system change that was implemented in the state of Utah a couple of years ago. This effort continues to focus on developing a coordinated preservice and inservice initiative in rural areas and on a collaborative effort between the Utah State Office of Education, university training program faculty, and rural school district personnel. Teachers and administrators might apply Utah's initiative in developing

effective programs for rural students with exceptionalities. The project suggests the need for individuals, organizations, and schools who share the vision for school reform in rural districts to work for implementing recommendations contained in the following sub-sections.

The Role of State Departments of Education

State Departments of Education should play dominant roles in making sure that more schools serve their students with exceptionalities. For instance, the Utah State Office of Education, Special Education Section established a consortium of local school district special education directors, representatives from higher education, and representatives from parent and advocacy groups with the goal of facilitating a system of personnel development for the entire state (Kukic, 1980). The members of the Comprehensive System of Personnel Development (CSPD) consortium meet monthly to discuss personnel issues and needs, and they coordinate inservice and technical assistance efforts across agencies. Additionally, the State Office of Education under the direction of CSPD consortium, provides inservice training and technical assistance statewide. Inservice training and assistance are specific to the district's identified personnel needs, and they usually involve a wide variety of individuals in inservice activities including regular educators, special educators, administrators, related service personnel and support staff (Schroeder, 1994). This project has been particularly helpful for many of Utah's rural districts that often are unable, because of limited resources and personnel, to provide training in recommended instructional practices.

Another exemplary project operated under the auspices of the State Office of Education in which there is a direct effect on students with exceptionalities is Utah's

Project for Inclusion. This effort, supported with federal and state funds, is designed to support schools throughout the state as staff develops inclusive educational programs for students with exceptionalities. The project staff provides inservice training and technical assistance designed to assist educators as they include students in their neighborhood schools and communities. The emphasis is on building natural supports in the neighborhood school and community for each student (McConnell, 1991). As it appears, other states in the nation must develop exemplary protective programs that will meet the needs of their rural students with exceptionalities. The Utah efforts must be modeled in the new millennium.

Rural School Districts' Efforts

Rural school districts must focus on the collaboration necessary to provide high quality instructional programs for students with low incidence disabilities. They are instrumental in the identification of specific personnel development and program delivery needs. For instance, in Utah, through the CSPD consortium and individually, rural district personnel have worked with state and university programs to develop and implement preservice and inservice training programs to address specific local needs.

Local rural districts must contribute resources in terms of space, time, and personnel to the collaborative personnel development efforts. For example, in order to release an entire school staff for inservice training, one district in Utah called upon the local Parent Teacher Association (PTA) for help. PTA members worked in classrooms during the time teachers received instruction on how to include students with low incidence disabilities in the regular classroom. To a large measure, rural districts must provide space and local technology for the distance teacher education program and also

assign master teachers to assist in university training so that distance education courses and field experiences can be facilitated (Sebastian & McDonald, 1995).

As indicated earlier, it is extremely difficult to locate and hire qualified teachers who are likely to fit in smoothly in the school and community and stay on the job for a long time. Sher (1977) reported that "the best rural teachers are the ones who are able to cope with sparsity, utilize community resources, invent curricular materials, and above all else, are oriented toward teaching children rather than subjects" (p. 287). Lemke (1995) agreed that there are benefits in working in rural and small schools. In an earlier study reported by Nachtigal (1992), teachers in rural schools responded more positively about their level of general job satisfaction than teachers in urban schools. Many positive features to working in rural schools include small class size, increased opportunity for individualized instruction, the chance to know each child as an individual, fewer behavioral problems, and less bureaucracy. Other aspects of teaching in special education classrooms in rural or small schools include greater student and parent participation in schools and school activities, greater heterogeneity of the social class, and a sense of greater teacher impact on the curriculum (Miller & Sidebottom, 1985; Swift, 1984). Teachers in these schools often have more opportunities to participate in the decision-making aspects of school site management than their peers in larger districts or those with more centralization of administrative functions (Muse & Thomas, 1992). Another possible benefit of working in a closely-knit community is that the teacher can utilize community members to help make learning activities more "real" by engaging students in studying their community.

More than a decade ago, Schmuck and Schmuck (1989) interviewed 119 teachers in 80 rural schools and found that over 90 percent had been raised in communities very close to where they now teach. Muse and Thomas (1992) suggested that "knowing that teachers with rural ties are more likely to come to rural communities and stay, rural districts should concentrate on attracting teachers with rural backgrounds . . . ." (p. 59). The term **growing your own** sometimes is used in relation to recruiting teachers, and it means that districts' personnel should look within their classified employee and volunteer groups for potential teachers. District administrators should try to offer incentives to these classified and volunteer groups and assist them in obtaining an education. This will aid these people in becoming teachers and build a strong allegiance to the district (Lemke, 1995). A successful alternative professional preparation program includes a state pilot program that involves classified employees (instructional assistants) who work during the week and attend class on Saturdays. Classes should be provided at new campus sites so participants would not have to spend time traveling to the campus. Other effective **grow your own** strategies established to attract new teachers include **Future Teacher of America Clubs.** These strategies will encourage students to consider teaching as a career and to think seriously about returning to their home communities once they have received their credentials.

Small and rural school district administrators have consistently reported difficulty in retaining qualified teachers. The turnover rate in many districts is high and results in added expense to the districts involved with continual recruitment to replace these teachers. Attrition disrupts students' lives and the continuity of the curricula. Strategies suggested in the literature (Swift, 1984) include the reimbursement of dues for

professional association memberships, opportunities for sabbatical and faculty exchange programs, reimbursement of tuition costs for continued professional development, the provision of release time for travel to professional meetings, and salary increments for teaching assignments which require multiple subject areas or grade level responsibilities.

The Role of Teacher Education Programs

College/University programs have wonderful roles to play in preparing teachers for rural areas. Their preparation can go a long way to help them work with learners with special needs. Because of long driving distances, mountain terrains, and desert regions, access to teacher preparation programs is difficult, if not impossible, for most rural teachers. For instance, in order to address the problem of preparing rural special educators, the faculty of the Department of Special Education at the University of Utah began the development of a technology-based distance education teacher preparation program (Egan, McCleary, Sebastian, & Lacy, 1988; Sebastian, 1991). A combination of live interactive television, prerecorded video taped instruction, live on-site courses and practicum supervision, along with the support of local rural master teachers, is used to deliver the required coursework and field experiences in two certification areas (mild and moderate disabilities and moderate and severe disabilities). Local educators and other community members are recruited to participate in the program. Because the program is delivered on-site in local rural school districts, program participants, already members of the community, tend to stay in the district. Additionally, rural special education administrators have encouraged previously certified teachers to participate in some of the advanced certification course work to update their skills with this population of students.

Also in Utah, an innovative multi-university preservice program designed to certify teachers in the area of hearing and vision impairments has been implemented through collaboration with the University of Utah, Utah State University, and Brigham Young University. The goal has been to prepare teachers in sensory impairments. By sharing faculty resources, the three universities are able to work together to prepare teachers in an area of critical need. In this program, faculty members utilize distance education technology for teachers in rural school districts to have access to the training (Robins, 1994). The new millennium must witness efforts in different university programs across the nation if rural students with exceptionalities are to be reached.

Technological Improvements

Technological advances are adding a new dimension to serving special education populations in rural areas. Technology is changing in both what, where, and how we teach special education students. For instance, devices that convert text into either auditory or tactile stimuli for students with visual impairments can be made available. Examples of devices include (a) the Kurzwil Reading Machine which produces synthetic speech from printed materials; (b) the Optacon which produces a tactile stimulus to the reader's fingertip; (c) the bar code reader which could "read" printed bar code; (d) speech synthesizers that plug into a computer that give voice to nonvocal students, people who are paralyzed by cerebral palsy, or other diseases, and dyslexic individuals; (e) voice or speech recognition equipment, which allows the computer to "hear"-- this is useful for individuals who are not physically capable of manipulating a computer keyboard; and (f) audio-conferencing which link people, places, and events by telephone. Computer networks must be available for use in drill and practice, writing, solving problems, and

other in-class activities. Other equipments that must also be made available to rural students with exceptionalities include (a) telewriting or the "electronic blackboard" which uses a normal-looking chalkboard upon which the sender writes, (b) Telecopying or Fax Machine, and (c) Electronic mail. Modern technology offers particular benefits for rural schools. Many of the most frequently identified rural service delivery problems (e.g., professional isolation and long distances between services and those needing them) can be partially ameliorated by the increased use of advanced technologies. Rural schools have had less access to most new forms of educational technology than nonrural schools (McCormick, 1983). The smallest and most isolated rural schools can potentially gain the most from the current technological flurry. Helge (1983) cited the following examples of successful uses of technology in a variety of rural settings and with diverse groups of students for such purposes as direct instruction, instructional support, management, and staff development.

1. ***Obtaining Service Delivery Information.*** The Rural Bulletin Board is administered by the American Council on Rural Special Education (ACRES). The Bulletin Board provides information specific to rural special education about conferences, successful practices in specific rural subcultures, rural job referral services, federal and state policies, the ACRES Resource Network, and recent publications.

2. ***Instructional Programming Information.*** Computer-assisted management system is used to organize programming and development of the IEP and other reports. Programs are linked to many IEP goal/objective statements to assessment instruments.

3. ***Gathering Data for Prescriptive Programming.*** A program at work in Otsego County, New York, uses videotapes in which children from remote areas react to a structured sequence of situations. The videotapes are sent to and viewed by staff at a more centralized rural facility. Their input is used by local personnel for planning prescriptive programming and for locating agencies which can best provide appropriate services.

4. ***Parent Training.*** During a four-day residential workshop in a program in Newfoundland, remotely located parents of children with hearing impairments view teaching videotapes. Training videotapes are later sent to the families on a monthly basis for use with their loaned videotape playback units.

5. ***Parent Communication.*** Strategic placement of C.B. radios can be an inexpensive, quick-access, and reliable approach to communicating with parents in rural Appalachia, telephone calls can be helpful as follow ups before and after parent/teacher organization (PTO) meetings.

6. ***Increasing Curricular Offerings.*** A high school in Littlefork, Minnesota, facing a decline in quality because of dwindling school population, inflation, and fewer resources, designed a system offering 178 courses to 78 high school students. Computer courses, correspondence courses, audiovisual resources, and videotape recorders were combined to make one curriculum package.

7. ***Instant Communication/Feedback.*** Telecommunication systems allow administrators located in great distances from the site of IEP meetings to participate in case conferences without being physically present. The audio teleconferencing network interconnects 47 sites with educational resources in

isolated rural areas of Montana. Educational offerings are available at all levels. Statewide educational meetings held using this system eliminate expensive and time-consuming travel. Electronic mail systems have enabled agencies delivering services and their supportive/monitoring agencies to communicate instantly regarding problems, and potential resources.

8. ***Allowing Students to Stay in Their Communities.*** Satellite instruction to remote communities has enabled many Alaskan students to stay in their home communities. A continuum of services has been designed ranging from totally home-bound education to short-term or long-term boarding school instruction.

9. ***Serving Homebound Students.*** Homebound students may be served via telecommunications through a telephone hookup in the child's home. A television placed in the student's home can receive educational programs designed/produced by the state or district.

10. ***Challenging Gifted Students.*** The advanced studies of 8 to 12-year-old students with gifts and talents at Calhoun County High School in Grantsville, West Virginia, included introduction to computers and programming, telecommunications systems, and programmed instruction. Project REACH (Raising Educational Achievement by Changing Horizons) includes a supervisor for special education and a teacher/program facilitator as sources of support. Supervision in rural areas appears particularly challenging because of greater teacher needs and lack of supervisory staff. According to Billingsley and Jones (1993), the control mission of special education programs is student growth. State education agencies can assist local education agencies (LEAs) by creating funding

and organizational arrangements conducive to building comprehensive supervisory programs. However, assessing local barriers, needs, and developing supervisory goals are important first steps in providing instructional leadership in special education.

Conclusion

In this article, we have presented issues surrounding the delivery of special education programs to rural students with exceptionalities. These issues are discussed in terms of the peculiar challenges and opportunities encountered by rural special educators, administrators, and the special students they serve. We focused on the nature of rural schools, specific training topics, and staffing issues. Programs that have been shown to work in some states (e.g., Utah) were highlighted. The fact that every state has some rural areas is stressed and many creative approaches to solving the problems in rural special education programs were cited.

In the new millennium, we must direct our attention on rural school districts if the problems they face are to be reduced, thus, enabling districts to meet the needs of rural students with exceptionalities in the most effective ways. We believe rural special education must have a stronger lobbying voice in national and state governments. Legislators must realize (as we have) that rural special education will continue to exist. This existence will be solidified when we come to the realization that all rural students deserve educational opportunities equal to those made available to students in urban and suburban districts.

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